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NEW YORK, NY 10176

EXAMINER

SMITH, JEFFREY S

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2624

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/722,673	Applicant(s) GUNTHER ET AL.	
	Examiner Jeffrey S. Smith	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the method of claim 1 and the device of claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The elements of claims 1 and 9 are not found in the detailed description of the application.

The amendment filed April 26, 2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The elements added to claims 1 and 9 are generally similar to page 6 of the application, however, the differences are enough to be new matter. Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant argues that support for the amendments to claims 1 and 9 are found at pages 6 and 13 of the specification as originally filed.

Claim 1 recites "obtaining positions of the at least three control points in the image, and comparing control point structures in the image to be rectified to control point structures in the reference image, each of the control point structures comprising a plurality of pixels." Page 6 of the application states "the positions of the control points obtained in the image to be rectified are determined more precisely by a comparison of the control point structures. It would be possible either to project parts of the control point structure of the image onto the reference image or to do the reverse." Thus, the comparison described in the specification is performed for the purpose of obtaining more precise positions of the control points, rather than after and independently of obtaining the positions of the control points as recited in claim 1 as amended. Presumably, the initial position of the control points is obtained in claim 1 in the previous step of "determining at least three control points in the image." Support for comparing that is independent of obtaining more precise positions of the control points is not found in the application as originally filed.

Claim 1 recites "projecting the less-resolved image area onto the more highly resolved image area corresponding to a mapping function." Page 6 of the specification states that "Image resolutions are preferably calculated for both image parts, and the less-resolved image part is projected onto the more highly resolved one." Performing the projecting of the less-resolved image part onto the more highly resolved one "corresponding to a mapping function" is not found on page 6 nor on page 13 of the

application as originally filed. If support does exist, it needs to be made more explicit. For example, what is the mapping function? Is it the same as the mapping function at the end of claim 1? Where is this mapping function found in the application as filed?

Claim 1 recites "determining gray-scale values of respective pixels in the control point structure of the image and in a corresponding control point structure of the reference image." Page 6 of the application states "the gray-scale values of the individual pixels in the control point structure or image structure are determined, and the differences between adjacent pixels are found." The support for the claim language of "determining gray-scale values of respective pixels... in a corresponding control point structure of the reference image" is not clearly apparent on page 6 of the application. If support does exist, it needs to be made more explicit.

Claim 1 recites "shifting one of the control point structure in the image and the reference image." Page 6 of the application states "the control point structure in the image to be rectified is shifted." Support for shifting the control point structure in the reference image is not apparent on page 6 of the application.

Claim 1 recites "comparing differences ... to derive an error value ... said error value being determined in a manner identical to the manner in which the new position of the control point structure is obtained." Page 6 states the gray-scale "differences are compared ... from which an error value is derived. Then the control point structure in the image to be rectified is shifted in the X or Y direction, and another error value is found. By the stepwise displacement of the control point structure in the X and Y directions, an error matrix is generated.... The position of the control point structure

that has the smallest error is identified as the best-adjusted position.” Page 6 of the application appears to be stating that an error value is derived, the control point structure is shifted and a second error value is derived, and this continues until an error matrix is created. In contrast, claim 1 recites deriving an error value by comparing differences, shifting the control point structure, and then determining the same error value. Also, claim 1 recites determining the error value in a manner identical to the manner in which the new position of the control point structure is obtained, which is not only new matter, but contradicts the discussion about deriving error values on page 6 of the application.

Furthermore, none of these new elements are found in the detailed description nor shown in the drawings. The detailed description and the drawings need to be revised to provide support for the claim.

Claims 2-8, which depend from claim 1 as amended, are rejected for depending on a base claim that is rejected under 35 U.S.C. 112, first paragraph.

Claim 9 as amended, which contains elements similar to those of claim 1 as amended, is also rejected for these reasons. Claims 10-18, which depend from claim 9 as amended, are rejected for depending on a base claim that is rejected under 35 U.S.C. 112, first paragraph.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Throughout claim 1, some elements recite a "control point structure of the image" and some elements recite a "control point structure in the image." One of these terms should be replaced with the other so that the terminology is consistent throughout the claim and consistent with the supporting terminology of the specification.

In claim 1, "projecting...corresponding to a mapping function" is unclear in light of "selecting one of a suitable mapping function," because the claim does not indicate whether the first mapping function is the same as the second mapping function or if they are two different mapping functions. If they are the same, "projecting ... corresponding to a mapping function" cannot be performed before "selecting ... a suitable mapping function."

In claim 1, the purpose of the transition from the term "control points" to "control point structures" and back to "control points" is unclear. The distinction between using the term control point structures, then using the term control points is also unclear. For example, why do the new elements recite an error value derived from gray-scale differences in control point structures, then the original elements revert to reciting an error in positional differences between control points and corresponding points? If these phrases have the same meaning, the terms used in these phrases should be consistent. If there is a distinction, this distinction should be made clear.

In claim 1, the term "determining gray-scale values of respective pixels in the control point structure of the image and in a corresponding control point structure of the reference image" should be "determining gray-scale values of respective pixels in the control point structure of the image and in the corresponding control point structure of the reference image" to reflect the antecedent basis of these elements introduced in the previous claimed element of "calculating."

In claim 1, "forming differences of gray-scale values between adjacent pixels in each of the corresponding control point structures" should be "forming differences of gray-scale values between adjacent pixels in the control point structure of the image and forming differences of gray-scale values between adjacent pixels in the corresponding control point structure of the reference image" so that the terminology is consistent with the antecedent terms and is consistent with the application as filed.

In claim 1, "comparing differences in the corresponding control point structures for corresponding pixels" should be "comparing said differences of gray-scale values between adjacent pixels in the control point structure of the image with said differences of gray-scale values of adjacent pixels of the corresponding control point structure of the reference image to derive an error value" so that the terminology is consistent with antecedent terms and with the application as originally filed.

In claim 1, "shifting one of the control point structure in the image and the reference image in at least one of a vertical and horizontal direction such that a new position of the control point structure is obtained" should be "shifting the control point

structure in the image in at least one of a vertical and a horizontal direction such that a new position of the control point structure in the image is obtained.”

In claim 1, “said error value being determined in a manner identical to the manner in which the new position of the control point structure is obtained” is unclear and inconsistent with page 6 of the application as originally filed. This error value, in light of page 6, appears to be a second error value that is derived after shifting the control point structure. This claim element should be changed so that it is clear and consistent with the previous error value and with page 6 of the application as filed.

In claim 1, “selecting one of a suitable mapping function and adjusting parameters of the mapping function, whereby the mapping function is changed by changing the parameters such that cumulative error in positional differences between control points and corresponding points in the reference image is minimized” appears to be related to the previous elements of shifting and deriving error values, yet the language of this element appears to be unrelated to these previous elements. If the control points and corresponding points of this element are the same as the control point structure of the image and the corresponding control point structure of the reference image, then this element should be amended to reflect this fact. What is the cumulative error, and how is it related to the previous errors in this claim? If the cumulative error is the same as the error matrix that is generated by shifting the control point structure and deriving another error value, then this element should be amended to reflect this fact. If minimizing the cumulative error is the same as using the error matrix for identifying the position of the control point structure that has the smallest

error, then this element should be amended to be consistent with the previous terms and page 6 of the application as originally filed.

Claims 2-8 are rejected because they depend from a base claim that is rejected under 35 U.S.C. 112, second paragraph.

Claim 9, which has similar limitations as claim 1, is rejected for the reasons given in the rejection of claim 1. Claims 10-18 are rejected because they depend from a base claim that is rejected under 35 U.S.C. 112, second paragraph.

Response to Arguments

The objection to the declaration is withdrawn.

The rejection of claim 7 under 35 U.S.C. 112, second paragraph is overcome by applicant's amendment.

The rejection of claims 1, 5-6, 8-9, 13-14 and 16 under 35 U.S.C. 102(b) is overcome by applicant's amendment.

The rejection of claims 2-4, 7, 10-12, 15 and 17-18 under 35 U.S.C. 103 is overcome by applicant's amendment.

Conclusion

Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Wherever possible, the Examiner has offered suggestions to the applicant for overcoming the new rejections.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey S. Smith whose telephone number is 571 270-1235. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSS

June 12, 2007


JINGGE WU
SUPERVISORY PATENT EXAMINER